

Recession and the Energy Landscape: Impact on energy demand and prices

Andrew Ellis

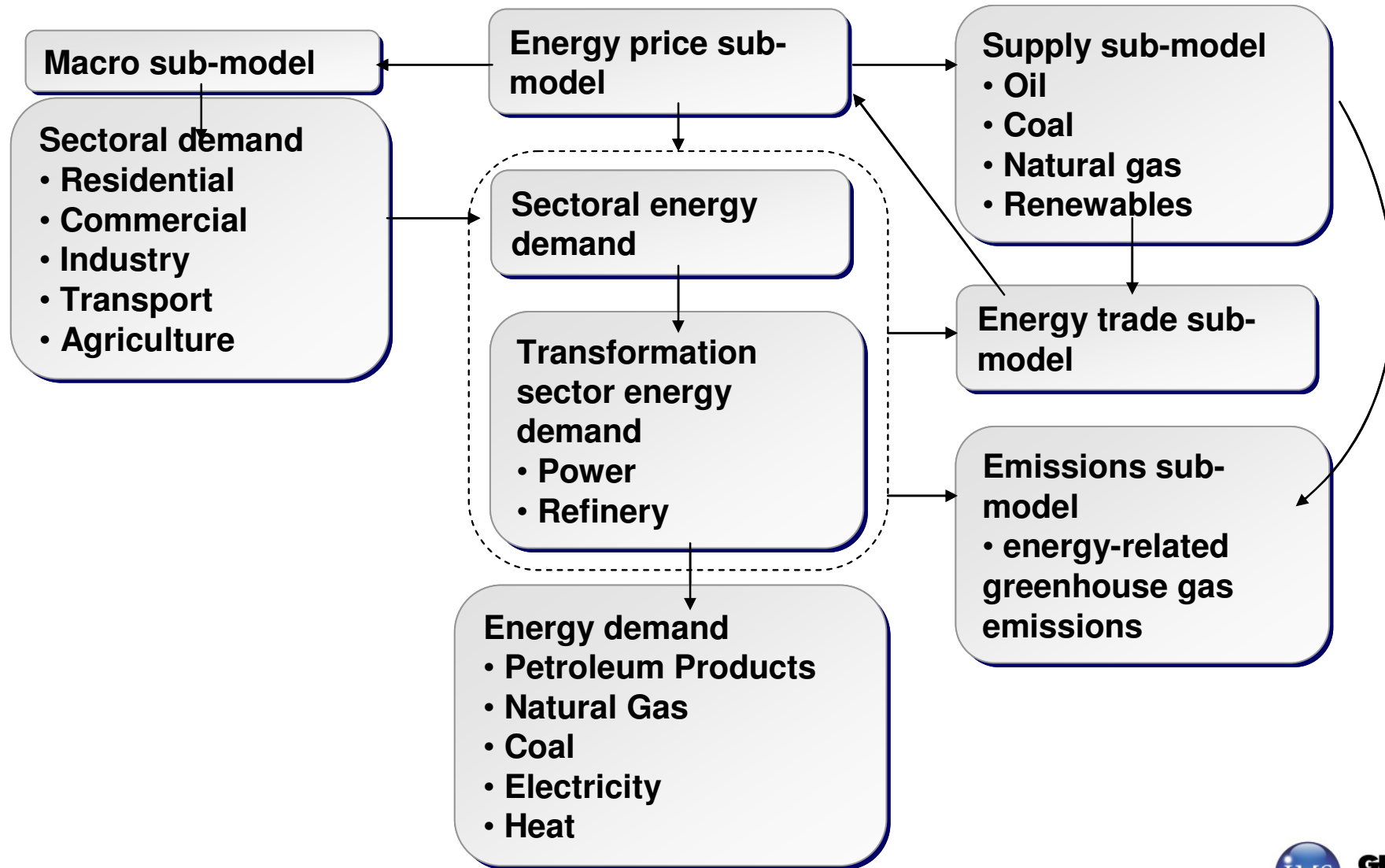
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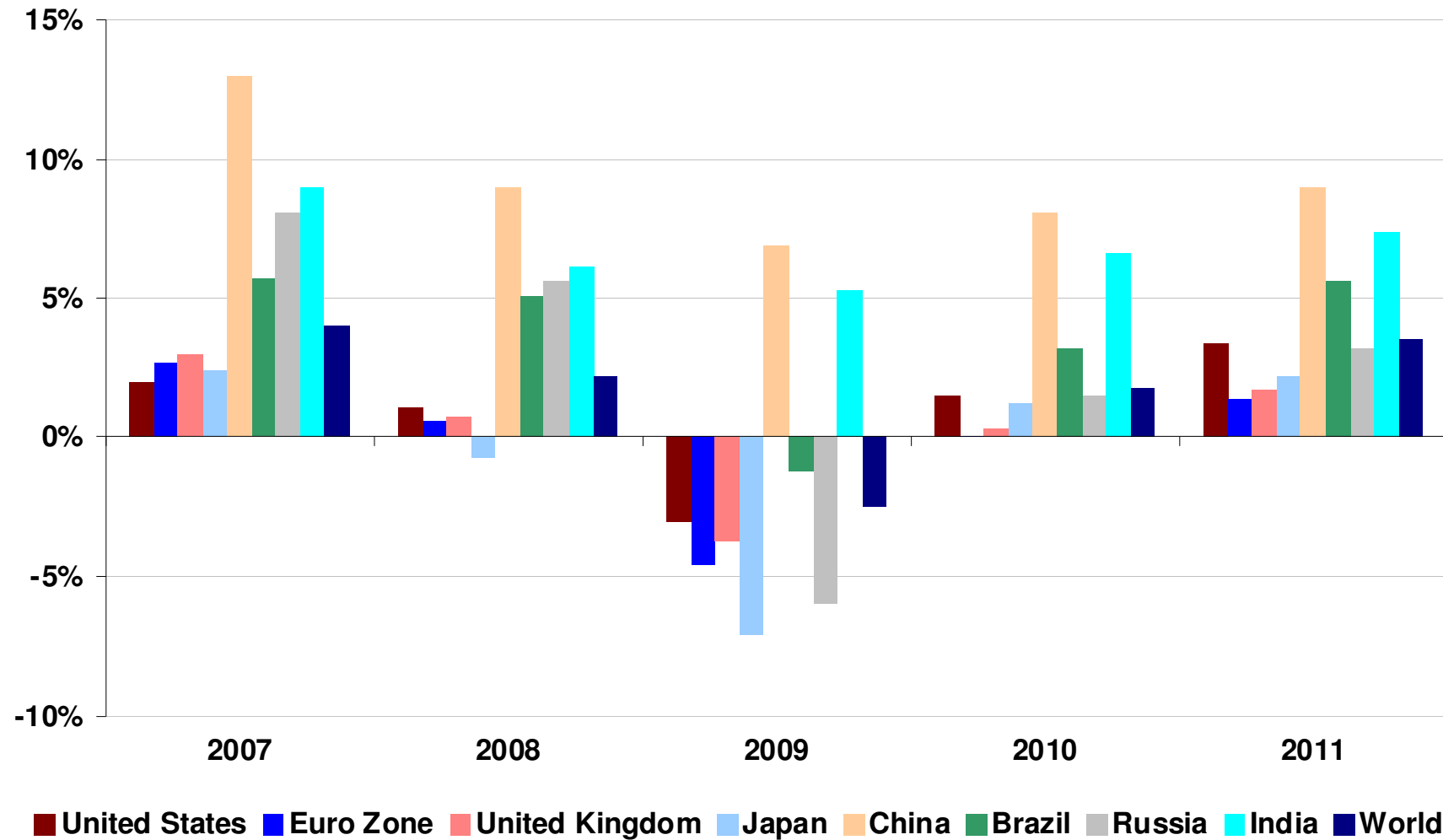
Energy Model – How it all fits together



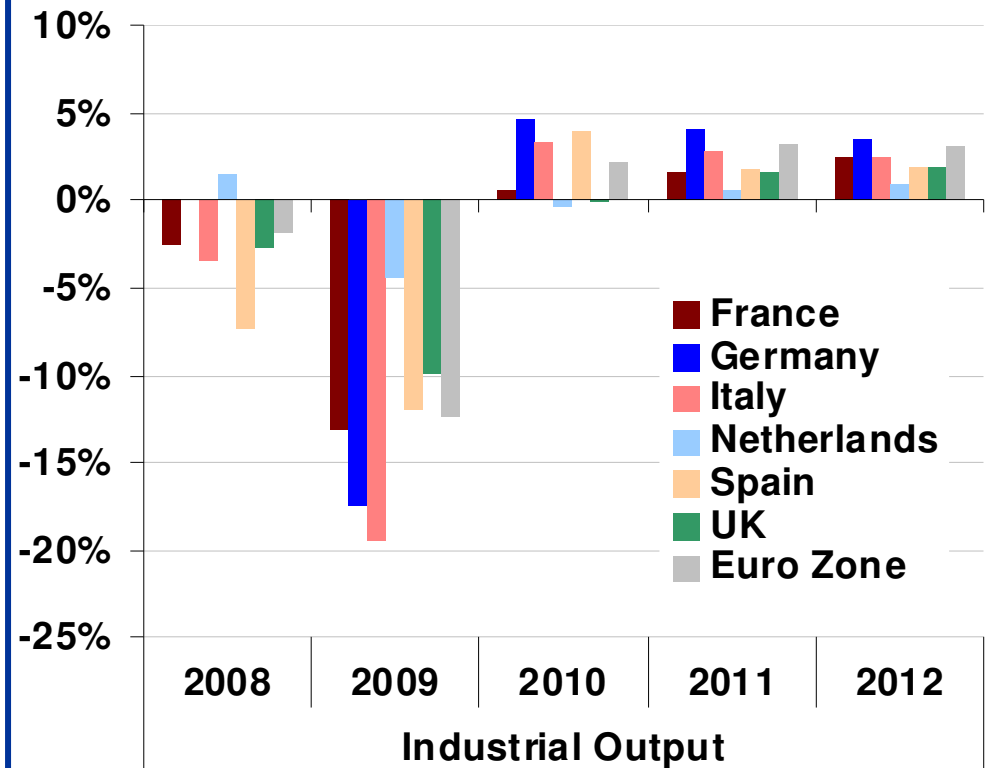
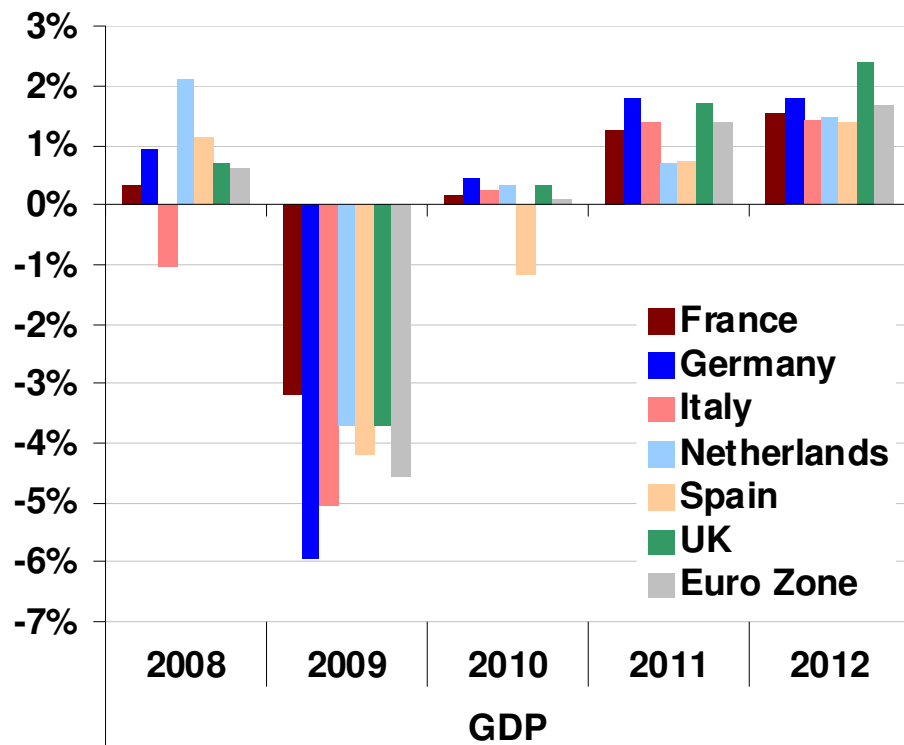
The Worst Global Recession in Six Decades

- Globalization has increased business-cycle synchronization
- North America, Europe, and Japan are facing severe downturns
- Growth in emerging markets will slow dramatically
- Stabilization of financial markets and aggressive fiscal stimulus will help to spark global recovery
- Bottom Line: a deep recession in 2009, modest recovery in 2010, and a stronger rebound in 2011-12
- Big question: is the global inventory cycle about to turn?

Scale of the problem – not for the fainthearted

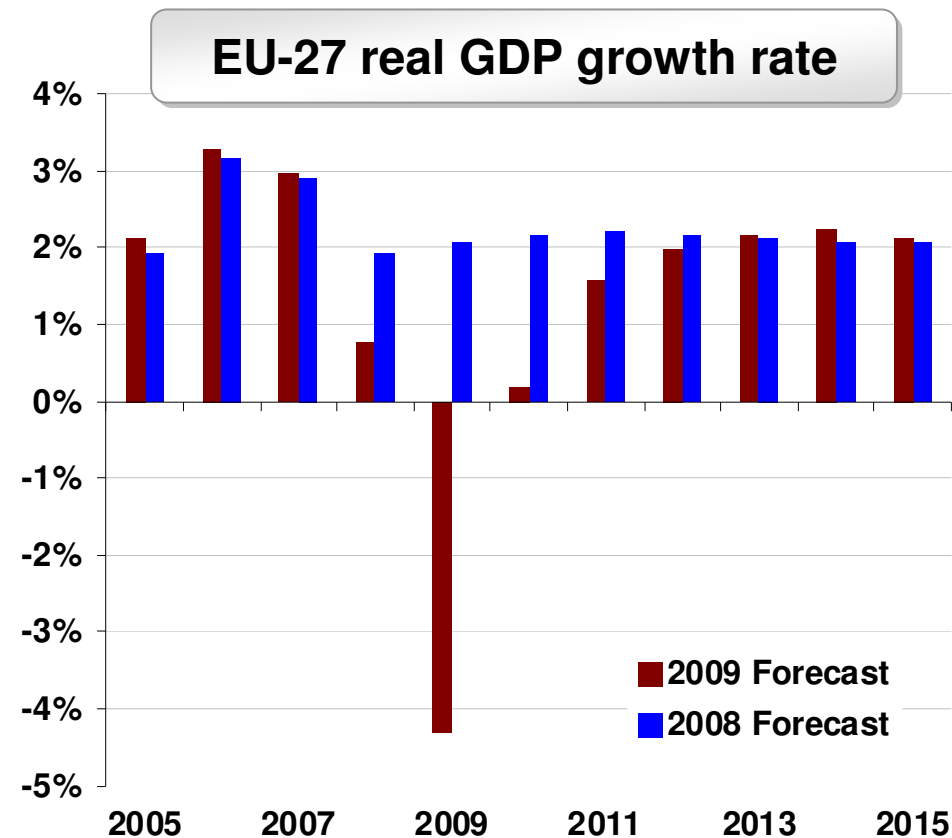


European economies amongst the worst hit

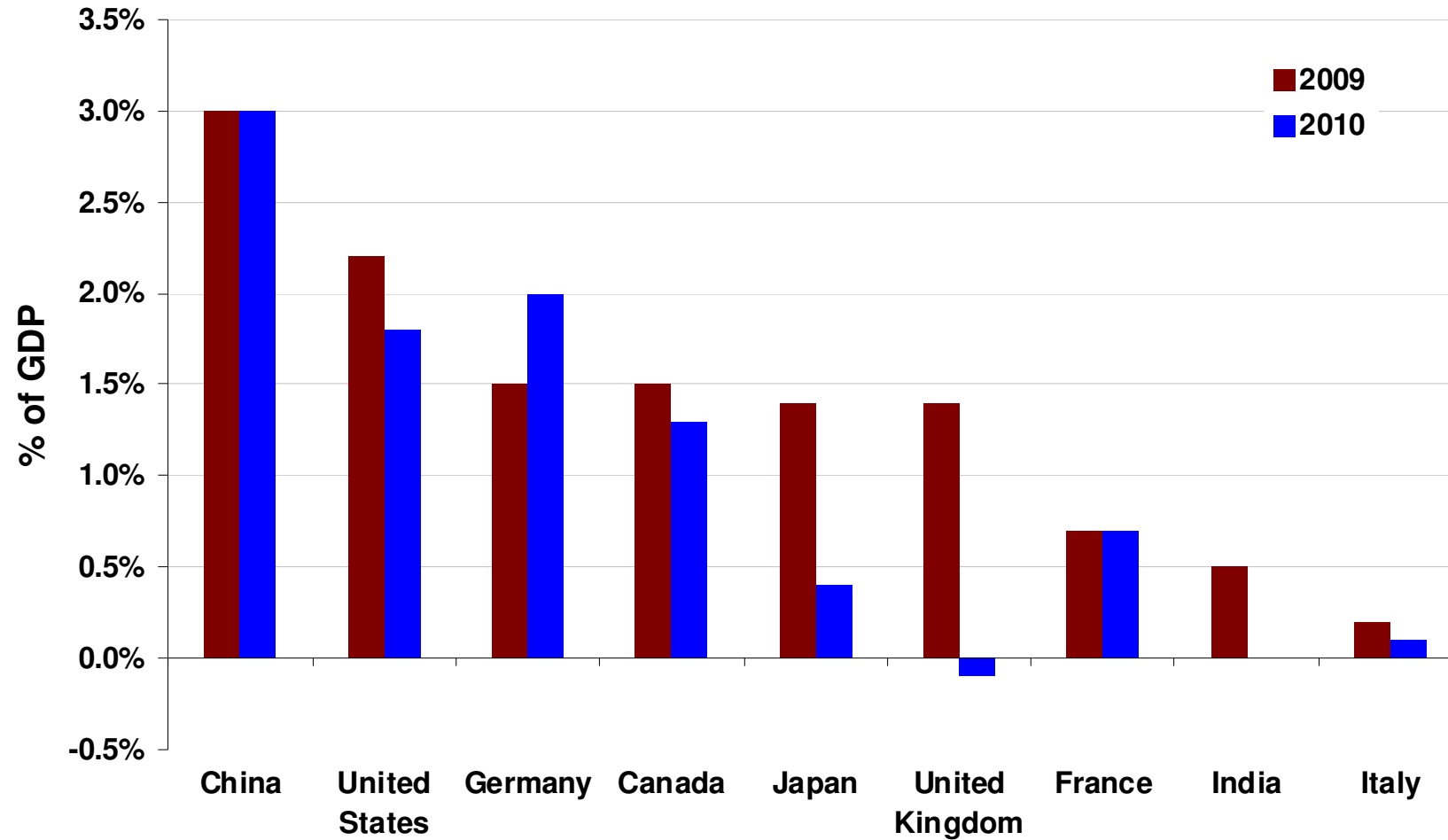


Mind the gap!

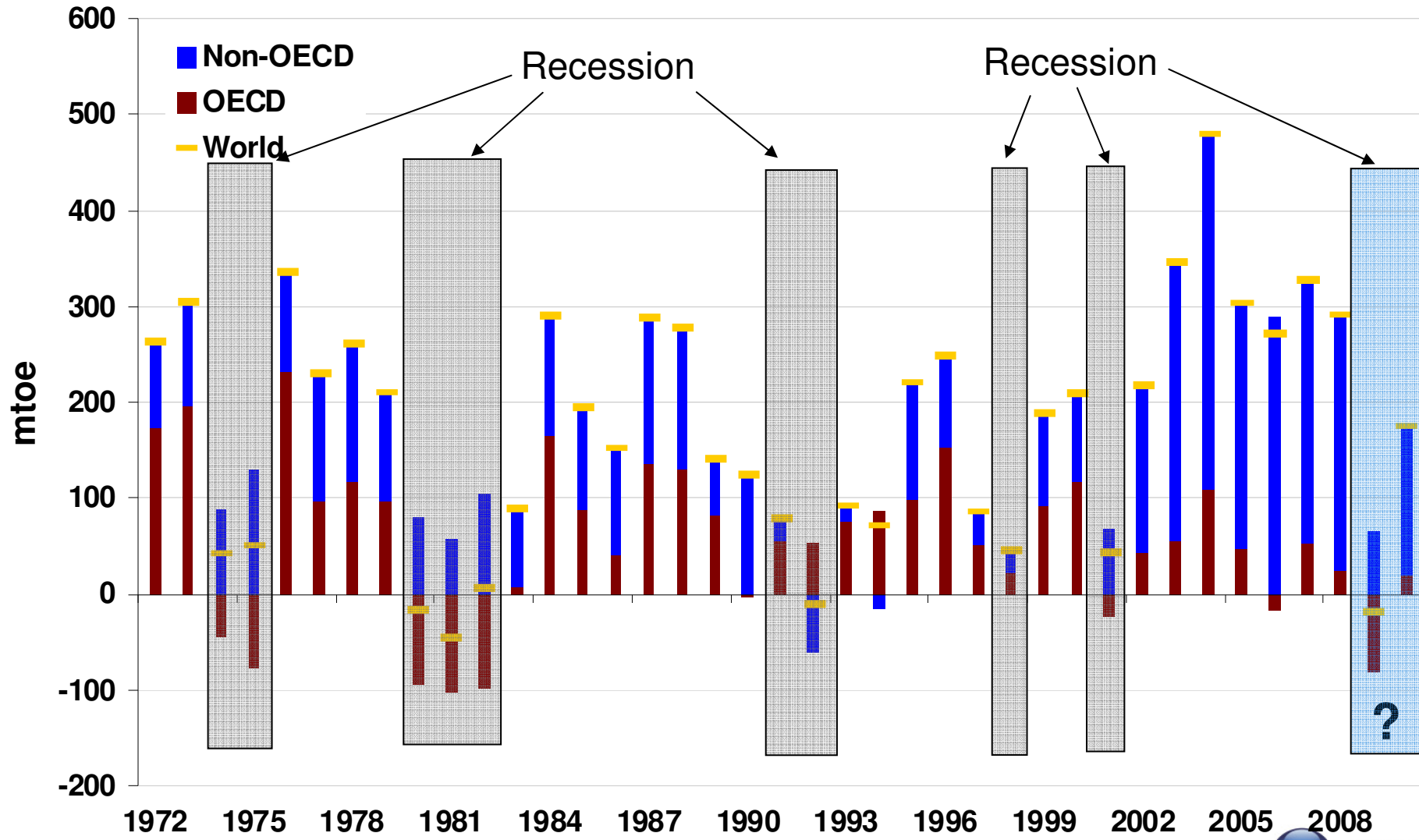
- Demand destruction
 - €420 billion wiped off Eurozone economy (2009)
 - Not recovered before 2013
- Slow recovery to trend growth
- Business confidence and purchasing manager index rising – but from historic lows
- Consumer confidence likely to be hit by rising unemployment
- Stimulus packages insufficient



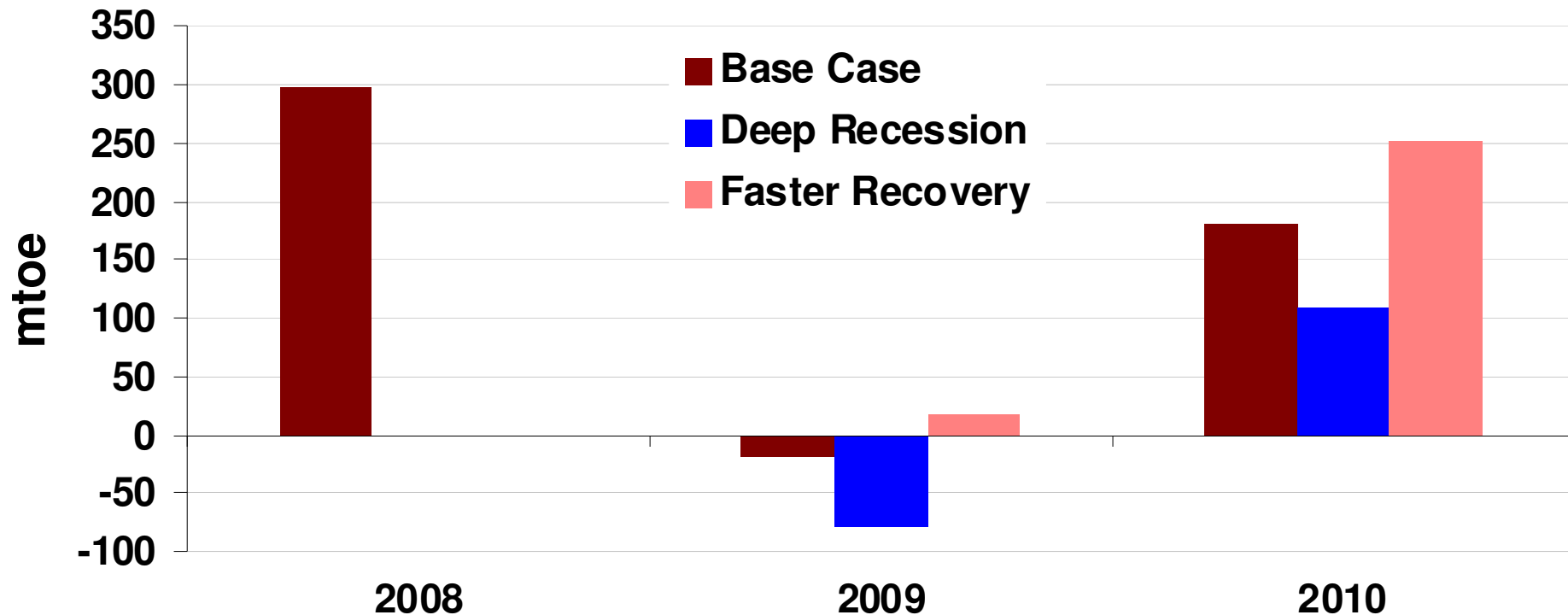
Stimulus packages



World Energy Demand Growth During Previous Recessions

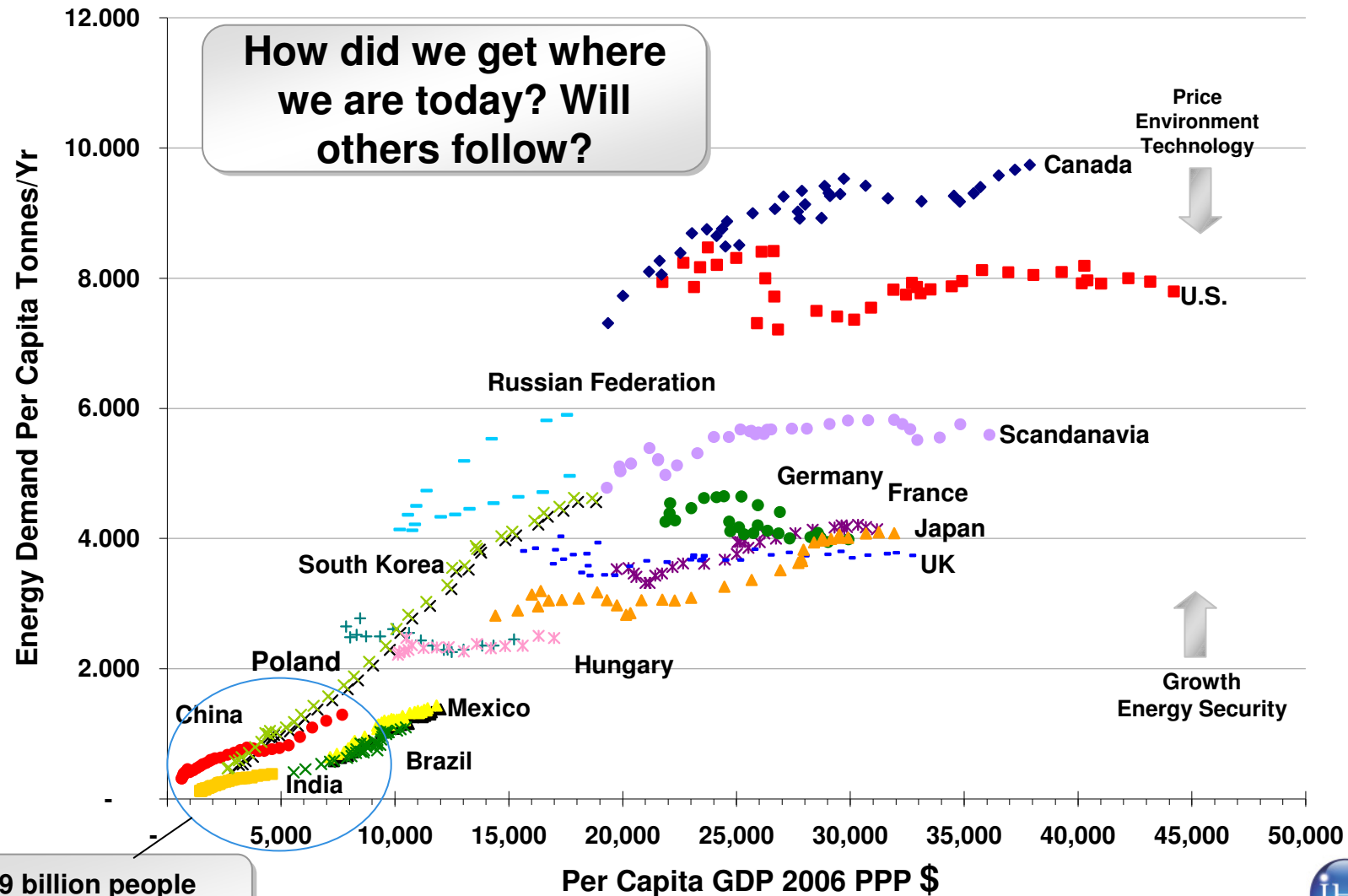


Global Change in Energy Demand (year-on-year)

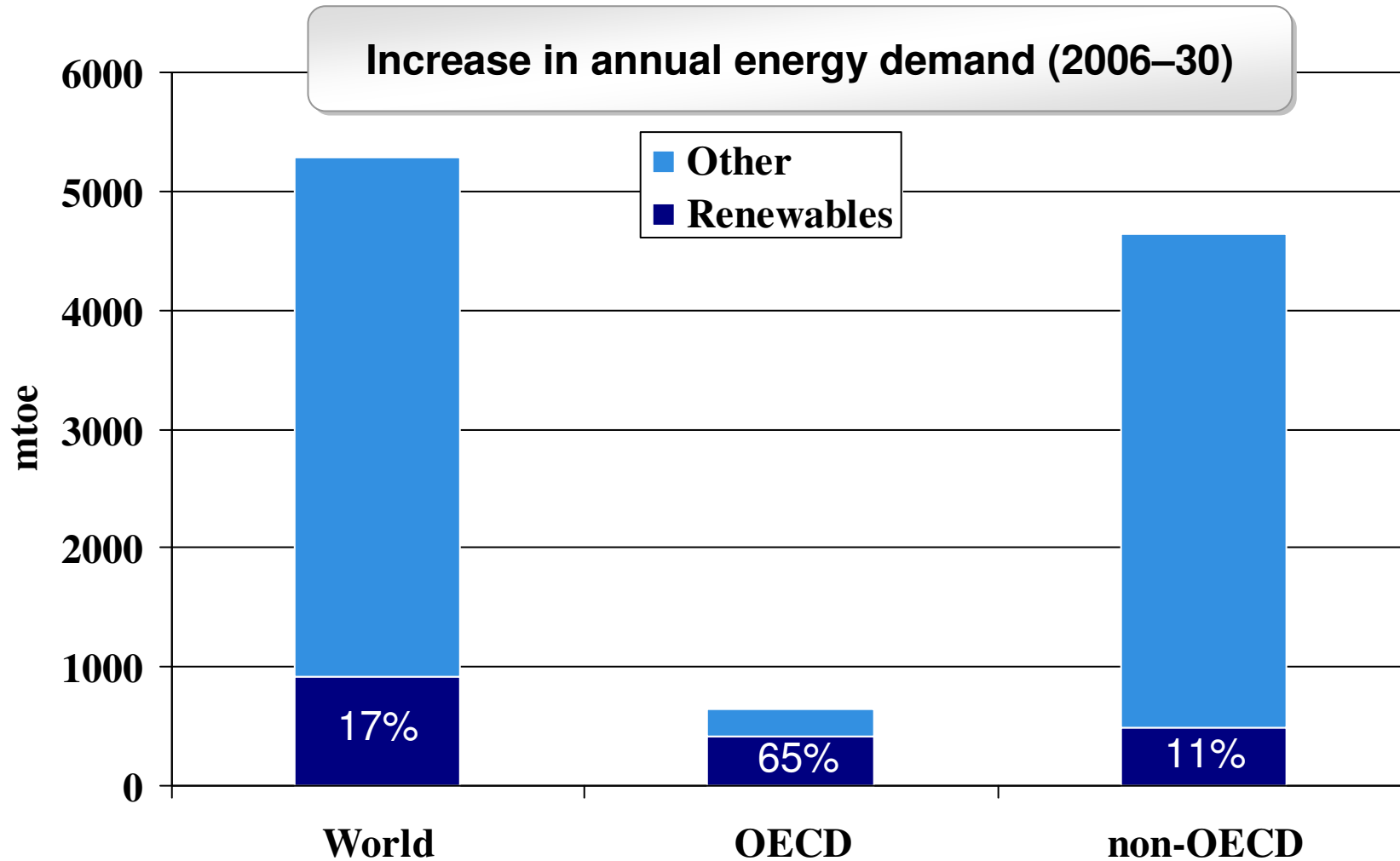


2009 looks very poor whatever scenario, but the bounce back is driven by Asia and is faster than the early 1980s.

Here Comes the World— Longer-term Prospects Remain Good



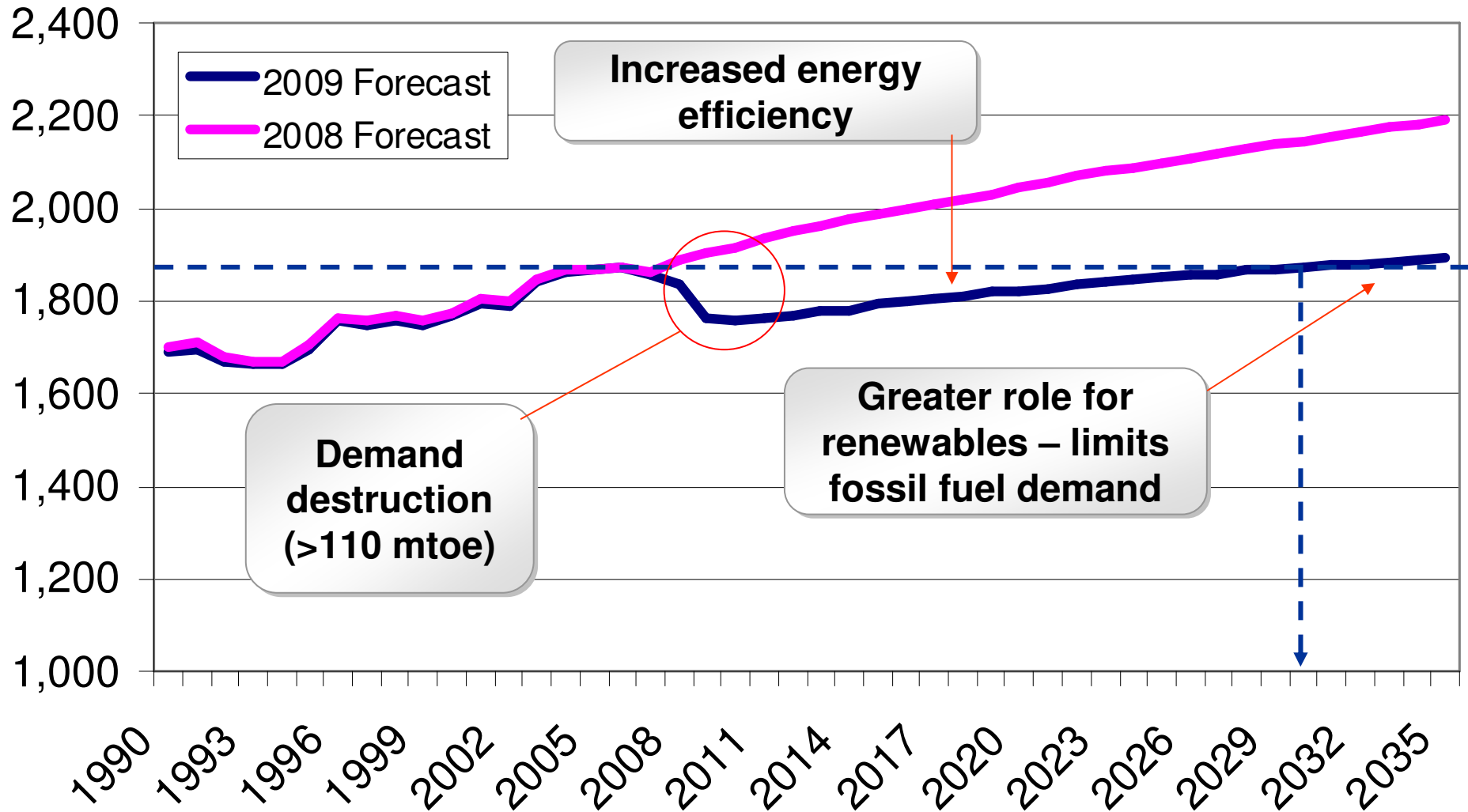
OECD Goes Renewable Rest of the World Sticks with Fossil Fuels



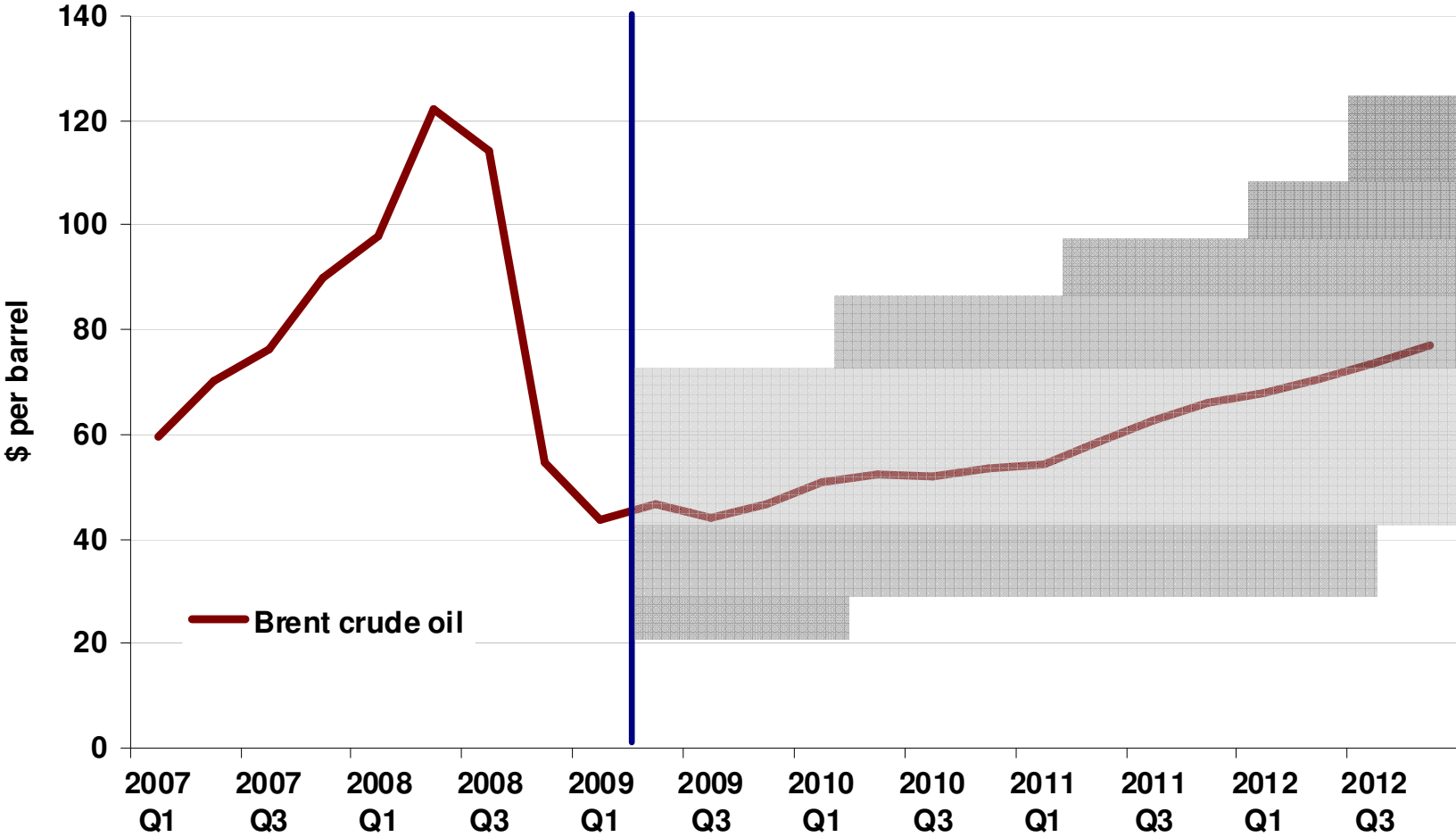
Source: IEA



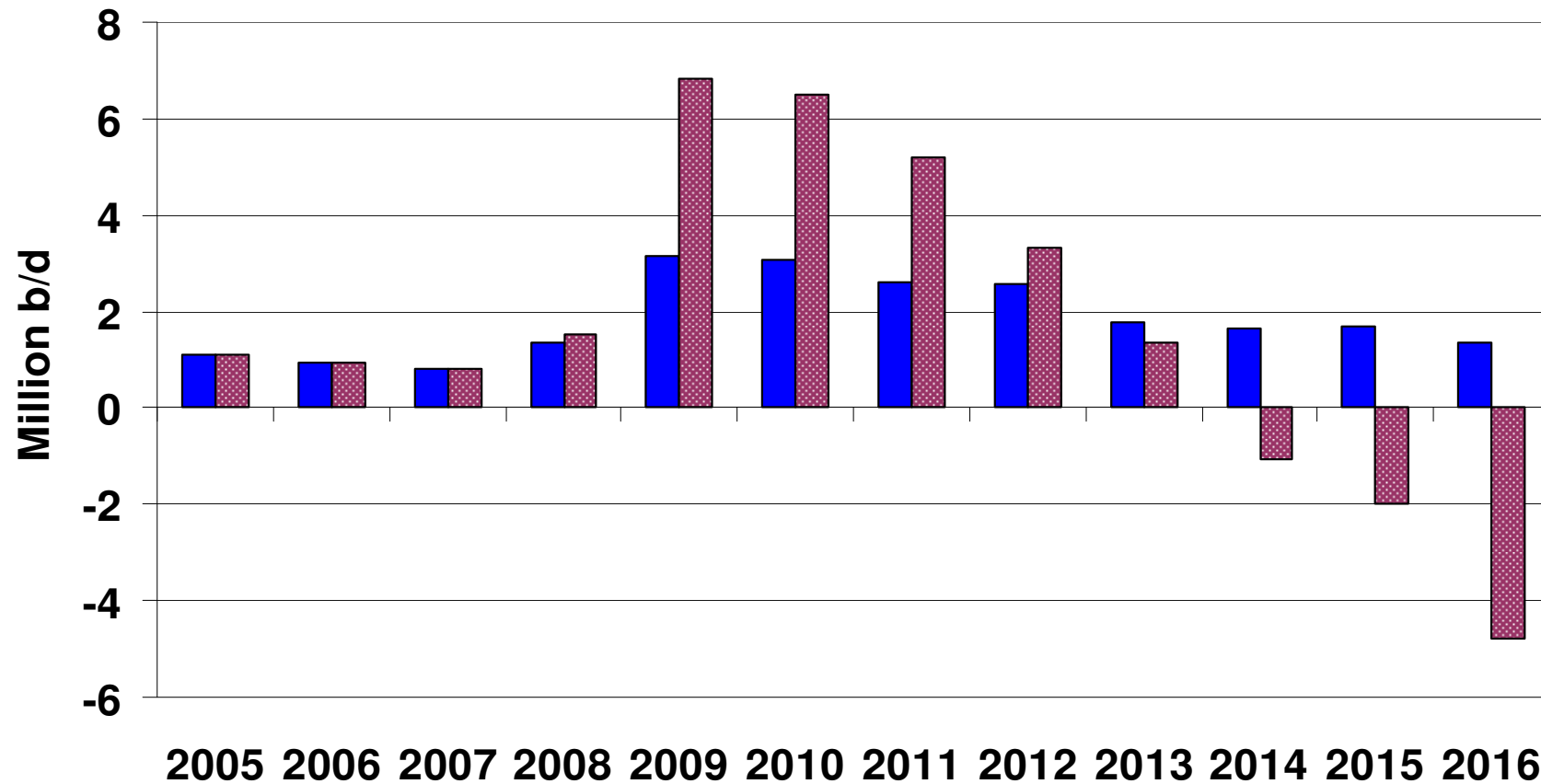
EU-27 Primary Energy Demand (mtoe)



Crude Oil Price: Upside Price Risks Reappear



Prolonged Price Fall Could Store Up Longer-Term Problems

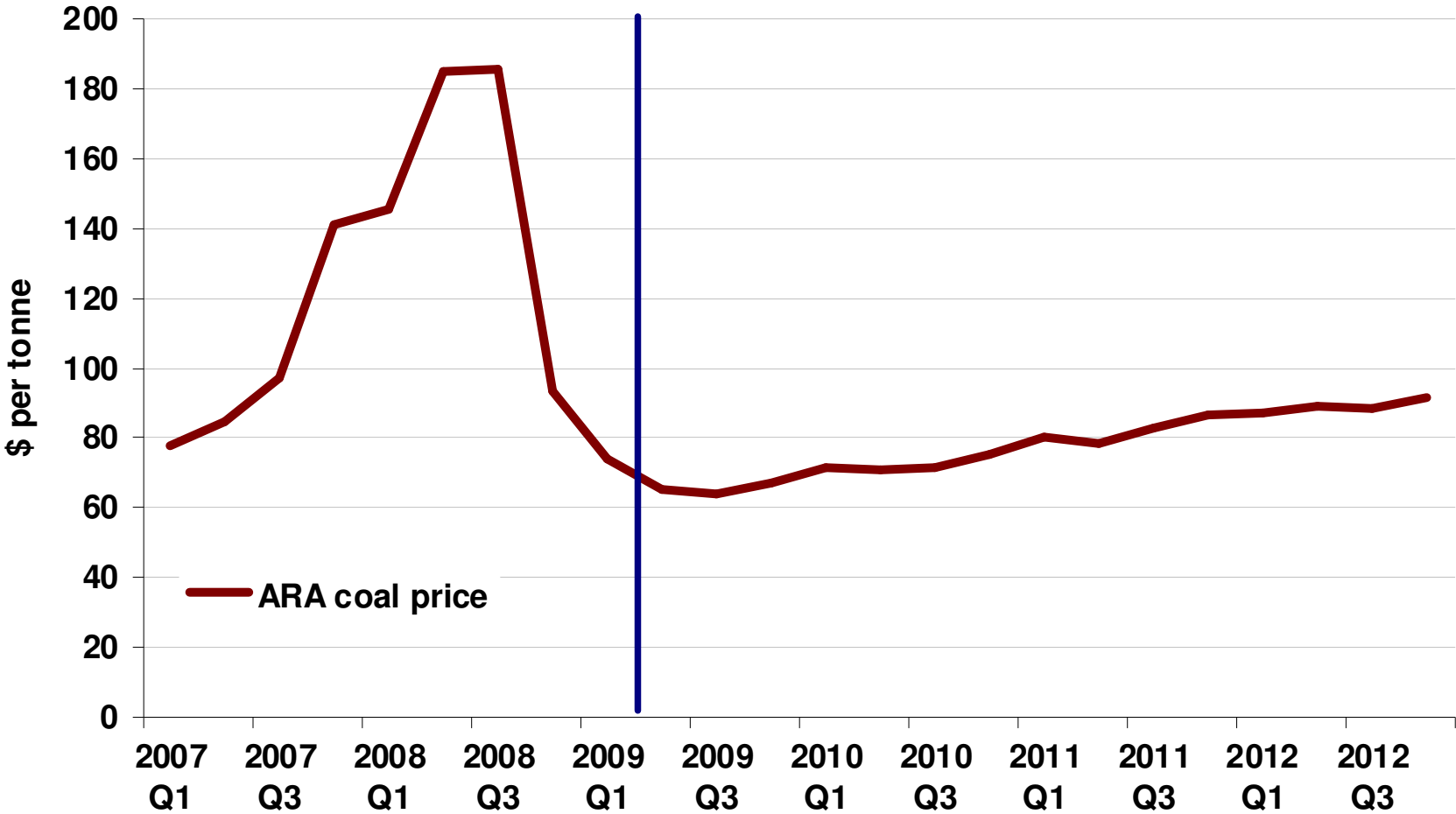


■ Spare Capacity (2008 Base Case) ■ Spare Capacity (Severe Recession)

Global coal

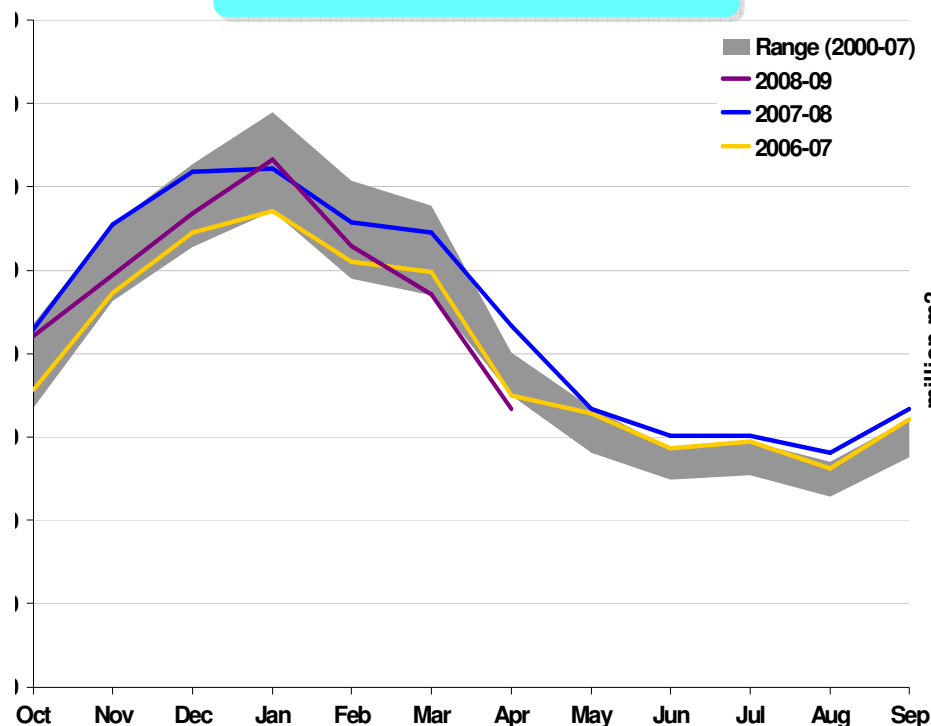
- Coal demand has not contracted – but growth is slowing
- Some markets are still growing – India
- Huge uncertainty over China's next move
 - more export licences to be issued
 - local prices above international levels – big domestic price falls ahead?
 - started taking raw materials and freights have begun to reawaken – green shoots?
- EU emissions allowances losing value, but so too are gas prices
 - industry closure reduces demand for credits and makes more available to the power sector
- Russia is the marginal supplier again – an 80mt/yr supplier
- New supply coming on-line but the rate of growth is slowing
 - Supplies have ratcheted back on production
 - Projects on hold or cancelled
 - Financing an issue
- Dramatic FOREX changes have brought non-US dollar supply costs down

Coal Price Outlook – Amsterdam-Rotterdam-Antwerp (ARA)



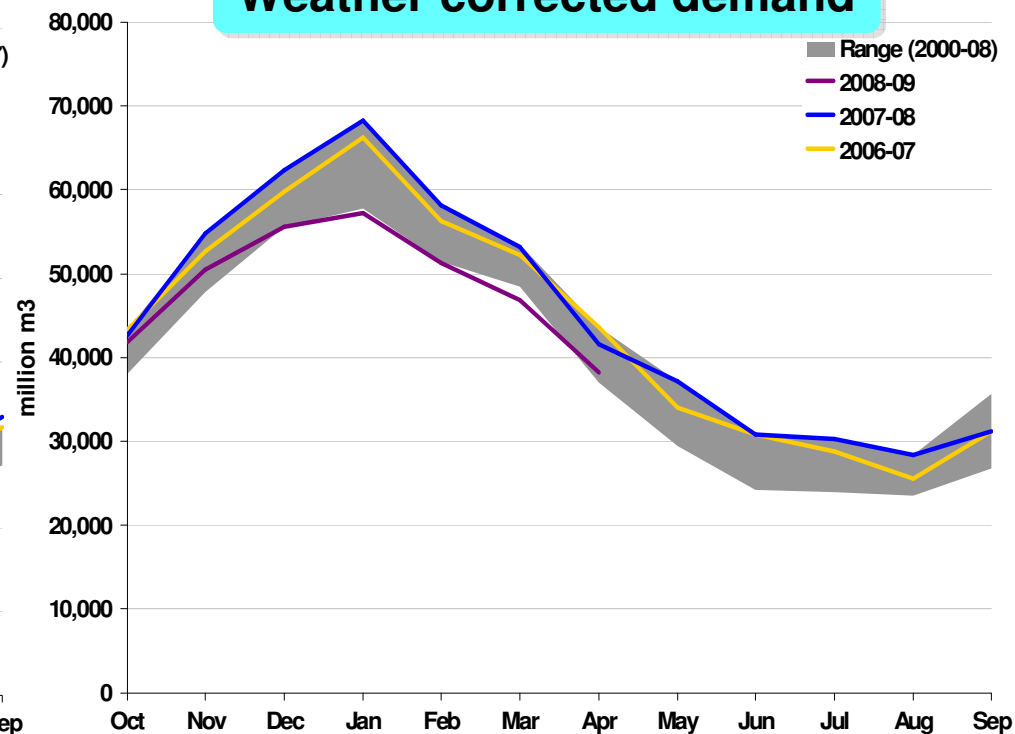
European gas demand (excluding Turkey)

Observed demand



Gas year	Demand	% chng
2006-07	479.7	-8.2%
2007-08	531.1	10.7%
2008-09	478.9	-9.8%

Weather corrected demand



Gas year	Demand	% chng
2006-07	524.4	0.5%
2007-08	538.8	2.7%
2008-09	475.4	-11.8%

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The end of oil-indexation?

- EU gas demand down by 10% (year-on-year)
- Storage 75%-80% full already
 - Gas Bubble beginning to develop
- Gazprom already turned down gas production by 20% (140 bcm/yr)
 - Loss of Revenue (lower volumes)
 - Loss of Margin (lower prices) + Currency devaluation
- New LNG trains in 2009/10 will add 50 bcm to global market
 - Will this simply replace turned down production?
 - Threat to Gazprom market share?
- Spot prices below oil-indexed
 - Temptation to buy spot over contracted gas
 - What about minimum off-take obligations? => Producers enforce ToP
- Further demand destruction in 2010?
 - Demand below minimum take-or-pay
 - Surplus gas off-loaded on Hubs? => Increased Trade and Liquidity

Gas-to-Gas Competition?

Factors favourable to gas-to-gas competition

- Potential large gas bubble with nowhere else to go
- Nascent spot markets ready and waiting
- Global Recession will focus on cost cutting – energy included
- Industry will demand access to lower cost spot gas
- Upstream not to be bought off with equity

Key elements are volume and liquidity

Factors against to gas-to-gas competition

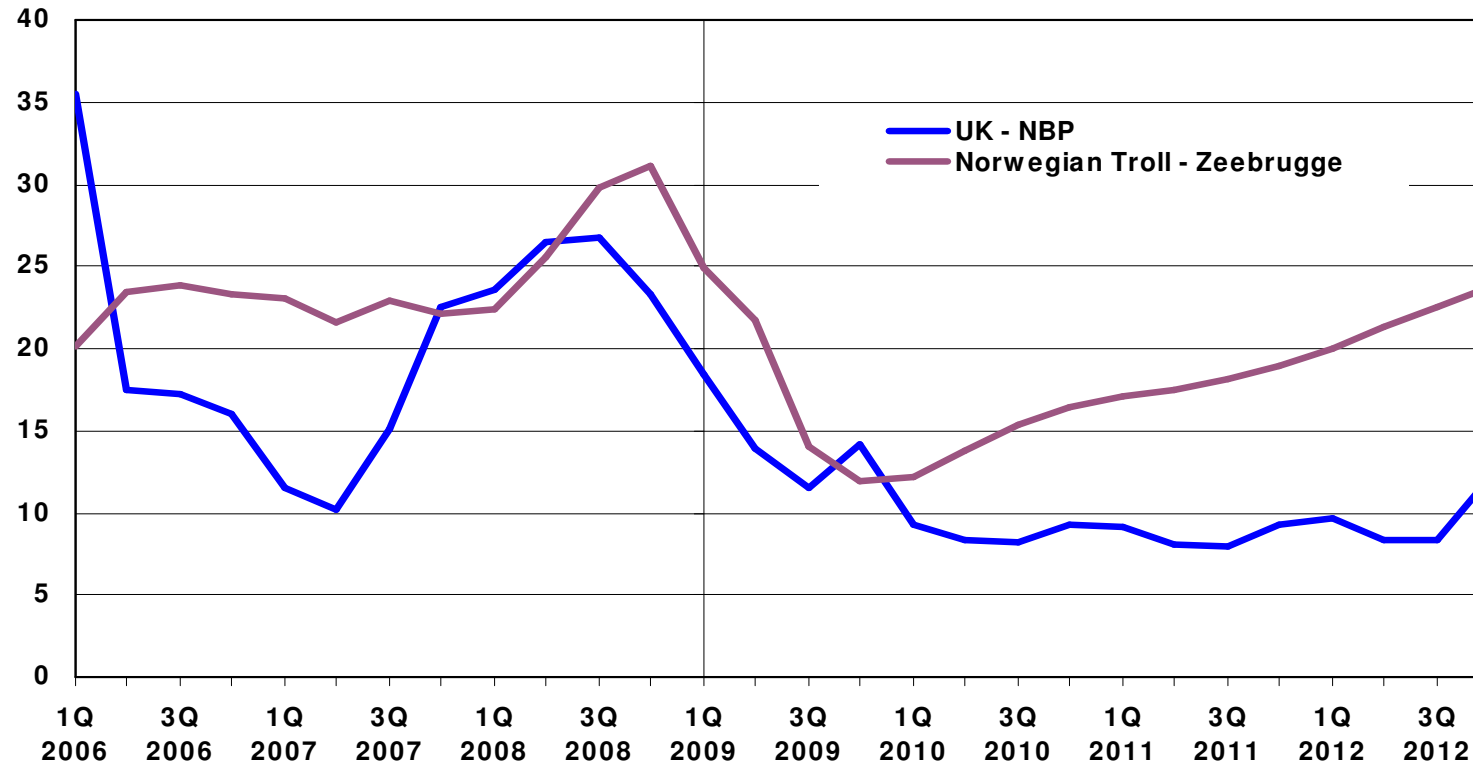
- Fragmentation of European markets
- Lack of access to transport capacity to spot markets
- Upstream could be bought off with equity
 - Gazprom takes equity in E.ON?
- Patchwork recession may offer outlet – especially for LNG

Key elements are access and scale and scope of recession

NBP v Troll Contract

NBP v Zeebrugge Troll

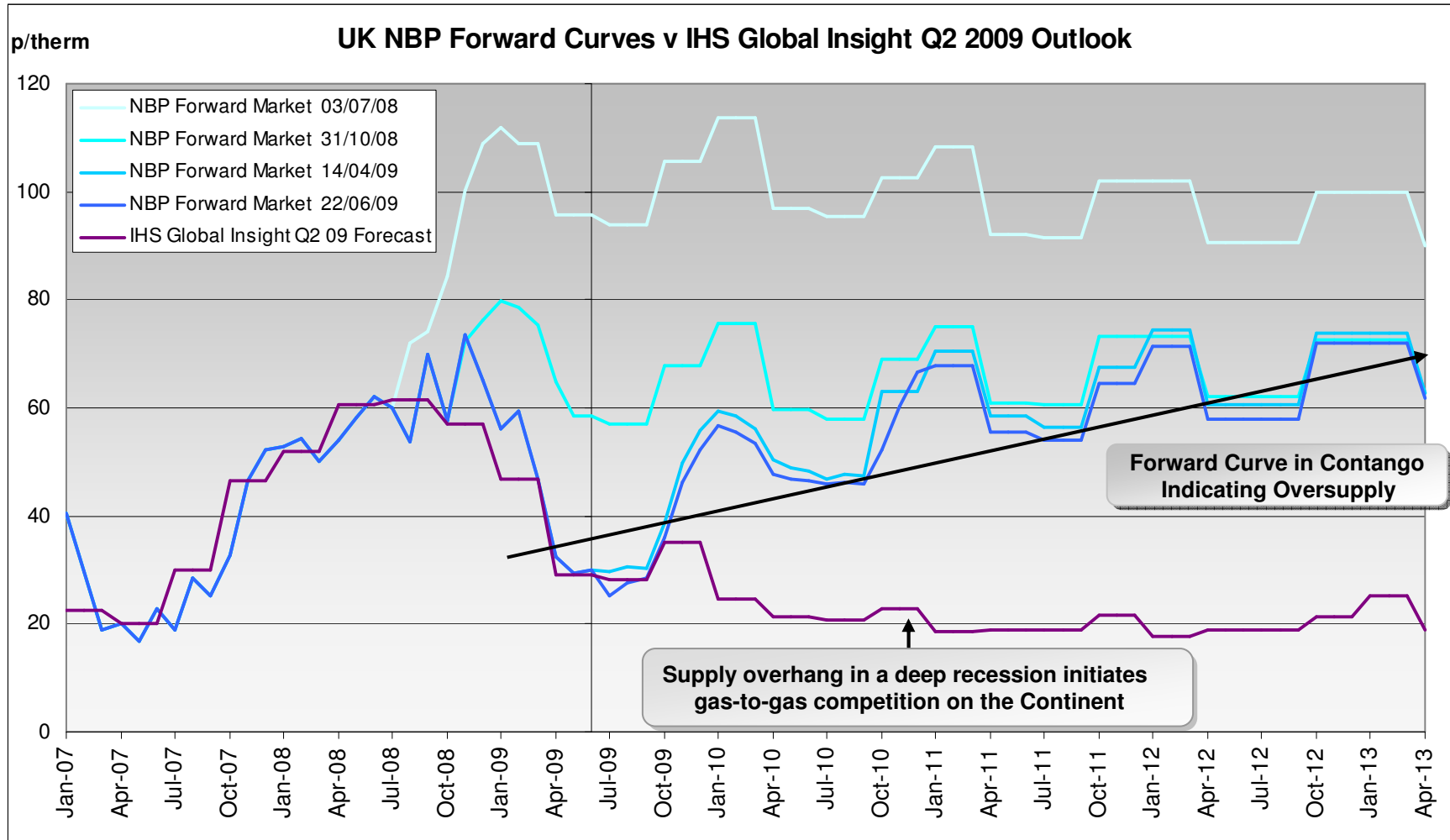
(€ per MWh)



NBP – National Balancing Point (UK)

Troll-Zeebrugge – Troll oil-indexed contact for delivery at Zeebrugge (Belgium)

IHS Global Insight vs Futures – NBP Contango



Some Final Thoughts

- Short-term all about demand destruction
 - Declining oil and gas demand
 - Limited growth in coal – focused on China and India
 - Fundamental structural changes possible – European gas
- Medium-term will investments come through
 - Is tomorrow's spike being established today?
 - Can regional disparities remain – globalisation of energy markets?
 - Can fossil fuel markets move independently?

Thank You!

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